

[0044] When receiving the evaluation value of the user's "love" index from the feeling deduction unit 100, the internal state management unit 110 reflects the evaluation value on the user's popularity rating. The internal state management unit 110 stocks the plurality of the evaluation values of the "love" index up until the present time, and deduces, for example, the user's popularity rating for the robot 20 on the basis of the plurality of the latest evaluation values (e.g., 21 evaluation values). Here, among the plurality of the evaluation values excluding the neutral evaluation value, the evaluation value having the larger number of the positive evaluation value and the negative evaluation value may be set as the evaluation value of the popularity rating. That is, if there are 11 or more positive evaluation values among the latest 21 evaluation values, the evaluation value of the popularity rating may be set as "positive," whereas if there are 11 or more negative evaluation values, the evaluation value of the popularity rating may be set as "negative."

[0045] The above is the description of the internal state of the user, and then the internal state of the robot 20 will be described.

[0046] The robot 20's "popularity rating" for the user is derived from the plurality of the evaluation values of the feeling deduced from the speech and action performed by the user on the robot 20 up until the present time. The internal state management unit 110 receives the evaluation value of the "love" index from the feeling deduction unit 100, and reflects the evaluation value on the robot 20's popularity rating for the user. The robot 20's popularity rating for the user tends to be linked to the user's popularity rating for the robot 20 described above. The internal state management unit 110 stocks the plurality of the evaluation values of the "love" index up to the present time, and determines the robot 20's popularity rating for the user on the basis of, for example, the plurality of the latest evaluation values (e.g., 11 evaluation values). Here, the reason for reducing the number of the evaluation values to be referred to when deducing the user's popularity rating is to make it easy to change the robot 20's popularity rating for the user. The robot 20's popularity rating for the user is an important parameter in determining the robot 20's feeling. Note that the popularity rating for the user may be evaluated not only by "positive" and "negative" but also by each of "positive" and "negative" in the plurality of stages.

[0047] In the embodiment, if the robot 20's popularity rating for the user is positive, the robot 20 empathizes with the user and performs action to achieve the joint viewing experience, while if the popularity rating for the user is negative, the robot 20 does not empathize with the user, but rather performs the action to react against the user. The action management unit 120 determines the action including the audio output of the robot 20 on the basis of the internal state of the robot 20 and the internal state of the user.

[0048] The action of the robot 20 when the user gets a home run in the baseball game will be described. The feeling deduction unit 100 deduces that the evaluation value of the "joy" index is "positive," and the internal state management unit 110 updates the evaluation value of the "joy" index of the user to "positive." Further, the internal state management unit 110 determines the evaluation value of the "joy" index of the robot 20 with reference to the evaluation value of the "joy" index of the user and the evaluation value of the robot 20's popularity rating for the user.

[0049] <In a Case in Which the Popularity Rating for the User is Positive>

[0050] In the case that the robot 20's popularity rating for the user is set to be positive, the internal state management unit 110 manages the robot 20's feeling so as to empathize with the user's feeling. Therefore, if the evaluation value of the "joy" index of the user is updated to be positive, the internal state management unit 110 also updates the evaluation value of the "joy" index of the robot 20 to be positive. Upon updating the internal state of the robot 20, the internal state management unit 110 provides the action management unit 120 with trigger information indicating that it is time to determine the action of the robot 20. Upon receiving the trigger information, the action management unit 120 determines the action of the robot 20 including the audio output on the basis of the internal state of the robot 20 updated in the object internal state storage unit 132, specifically, on the basis of the evaluation value of the updated feeling. For example, the action management unit 120 generates the contents of the speech "ox(player's name) is awesome. He has got a home run," and determines the action as the movement of the robot 20 with arms up in the air twice. These contents of the speech and the movements are notified to the output processing unit 140, and the output processing unit 140 causes the robot 20 to perform the action determined by the action management unit 120.

[0051] The output processing unit 140 generates the audio data for controlling the output timing of the robot 20 such as a speech speed and each timing of the speech and the movement, etc., and the drive data for driving the robot 20, to output the data to the robot 20. When the communication unit 32 in the robot 20 receives the audio data and the drive data, the control unit 30 provides the audio data to the speaker 36 so as to cause the speaker 36 to output the audio, and cause the motor of the drive mechanism 34 to be driven on the basis of the drive data. Accordingly, the robot 20 performs the speech and the movement that empathizes with the user who has got a home run. The user sees the robot 20 being pleased together, and the affinity with the robot 20 as well as the motivation for the game may be increased.

[0052] Conversely, in a case in which the user gives up a home run, the evaluation value of the "joy" index of the user is updated to negative, so that the internal state management unit 110 updates the evaluation value of the "joy" index of the robot 20 to negative. Upon updating the internal state of the robot 20, the internal state management unit 110 provides the action management unit 120 with the trigger information. Thereby, the action management unit 120 determines the action including the audio output of the robot 20 on the basis of the evaluation value of the "joy" index of the robot 20 updated in the object internal state storage unit 132. For example, the action management unit 120 generates the contents of the speech "Oh no. You've given up a home run," and determines, as the movement of the robot 20, the action that causes weakness in a dejected manner. These contents of the speech and movements are notified to the output processing unit 140, and the output processing unit 140 causes the robot 20 to perform the action determined by the action management unit 120.

[0053] <In a Case in Which the Popularity Rating for the User is Negative>

[0054] In contrast, in a case in which the robot 20's popularity rating for the user is set to be negative, the internal state management unit 110 manages the robot 20's